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DSM-5 autism spectrum disorder: In search of essential behaviours for diagnosis

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Abstract

Background: Despite initial concerns about the sensitivity of the proposed diagnostic criteria for DSM-5 Autism Spectrum Disorder (ASD; e.g., Gibbs et al., 2012; McPartland et al., 2012), evidence is growing that the DSM-5 criteria provides an inclusive description with both good sensitivity and specificity (e.g., Frazier et al., 2012; Kent, Carrington et al., 2013). The capacity of the criteria to provide high levels of sensitivity and specificity comparable with DSM-IV-TR however relies on careful measurement to ensure that appropriate items from diagnostic instruments map onto the new DSM-5 descriptions.

Objectives: To use an existing DSM-5 diagnostic algorithm (Kent, Carrington et al., 2013) to identify a set of 'essential' behaviors sufficient to make a reliable and accurate diagnosis of DSM-5 Autism Spectrum Disorder (ASD) across age and ability level.

Methods: Specific behaviors were identified and tested from the recently published DSM-5 algorithm for the Diagnostic Interview for Social and Communication Disorders (DISCO). Analyses were run on existing DISCO datasets, with a total participant sample size of 335. Three studies provided step-by-step development towards identification of a minimum set of items. Study 1 identified the most highly discriminating items ($p < .001$). Study 2 used a lower selection threshold than in Study 1 ($p < .05$) to facilitate better representation of the full DSM-5 ASD profile. Study 3 included additional items previously reported as significantly more frequent in individuals with higher ability. The discriminant validity of all three item sets was tested using Receiver Operating Characteristic curves. Finally, sensitivity across age and ability was investigated in a subset of individuals with ASD ($n = 190$).

Results: Study 1 identified an item set (14 items) with good discriminant validity, but which predominantly measured social-communication behaviors (11/14). The Study 2 item set (48 items) better represented the DSM-5 ASD and had good discriminant validity, but the item set lacked sensitivity for individuals with higher ability. The final Study 3 adjusted item set (54 items) improved sensitivity for individuals with higher ability and performance and was comparable to the published DISCO DSM-5 algorithm.

Conclusions: This work represents a first attempt to derive a reduced set of behaviors for DSM-5 directly from an existing standardized ASD developmental history interview. Further work involving existing ASD diagnostic tools with community-based and well characterized research samples will be required to replicate these findings and exploit their potential to contribute to a more efficient and focused ASD diagnostic process.